

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

United States Patent and Trademark  
Office  
(Box PCT)  
Crystal Plaza 2  
Washington, DC 20231  
ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 15 December 1998 (15.12.98)	
International application No. PCT/IB98/00625	Applicant's or agent's file reference Sond.02, PCT
International filing date (day/month/year) 24 April 1998 (24.04.98)	Priority date (day/month/year) 26 April 1997 (26.04.97)
Applicant SONDEREGGER, Peter	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

19 November 1998 (19.11.98)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer S. Cruz Telephone No.: (41-22) 338.83.38
---	---

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

United States Patent and Trademark  
Office  
(Box PCT)  
Crystal Plaza 2  
Washington, DC 20231  
ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 17 December 1998 (17.12.98)	
International application No. PCT/IB98/00625	Applicant's or agent's file reference Sond.02, PCT
International filing date (day/month/year) 24 April 1998 (24.04.98)	Priority date (day/month/year) 26 April 1997 (26.04.97)
Applicant SONDEREGGER, Peter	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

19 November 1998 (19.11.98)

☐ in a notice effecting later election filed with the International Bureau on:2. The election ☒ was☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer S. Cruz
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>Sond 02, PCT</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/IB 98/00625</b>	International filing date (day/month/year) <b>24/04/1998</b>	(Earliest) Priority Date (day/month/year) <b>26/04/1997</b>
Applicant <b>SONDEREGGER, Peter</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 5 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. ☒ **Certain claims were found unsearchable** (see Box I).

2. ☐ **Unity of invention is lacking** (see Box II).

3. ☒ The international application contains disclosure of a **nucleotide and/or amino acid sequence listing** and the international search was carried out on the basis of the sequence listing

☒ filed with the international application.

☐ furnished by the applicant separately from the international application,

☐ but not accompanied by a statement to the effect that it did not include matter going beyond the disclosure in the international application as filed.

☐ Transcribed by this Authority

4. With regard to the **title**, ☒ the text is approved as submitted by the applicant

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this International Search Report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is:

Figure No. — ☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☐ None of the figures.

# INTERNATIONAL SEARCH REPORT

international application No.

PCT/IB 98/00625

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:  
**Remark:** Although claims 40 42 44 and 45 are (partially) directed to a method of treatment of the human/animal body or to a diagnostic method practised on the human/animal body, the search has been carried out and based on the alleged effects of the compound.
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**Remark on Protest**

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB 98/00625

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 C12N15/57 C12N9/64 A61K31/70 A61K38/48 C12Q1/37  
A61K48/00 C07K16/40 C12N15/00 A01K67/027 C12Q1/68

According to International Patent Classification(IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 C12N A61K C12Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EMBL/GENBANK DATABASES Accession no AA166524, Sequence identification MMAA66524, 21 December 1996 MARRA M ET AL: "The WashU-HHMI Mouse EST Project" XP002075099 see the whole document ---	1, 34, 37, 38, 42
X	EMBL/GENBANK DATABASES Accession no AA373034, Sequence identification HSZZ78160, 18 April 1997 ADAMS M ET AL: "Initial assessment of human gene diversity and expression patterns based upon 83 million nucleotides of cDNA sequence" XP002075100 see the whole document --- -/--	1, 34, 37, 38, 42



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

## ° Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

25 August 1998

Date of mailing of the international search report

04/09/1998

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Van der Schaal, C

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EMBL/GENBANK DATABASES Accession no AA073513, Sequence identification MMA73513, 5 October 1996 MARRA M ET AL: "The WashU-HHMI Mouse EST Project" XP002075101 see the whole document ---	1, 34, 37, 38, 42
X	EMBL/GENBANK DATABASES Accession no AA063841, Sequence identification MMA63841, 25 September 1996 MARRA M ET AL: "The WashU-HHMI Mouse EST Project" XP002075102 see the whole document ---	1, 34, 37, 38, 42
A	YAMASHIRO K ET AL: "Molecular cloning of a novel trypsin-like serine protease (neurosin) preferentially expressed in brain." BIOCHIMICA ET BIOPHYSICA ACTA, (1997 JAN 3) 1350 (1) 11-4. JOURNAL CODE: AOW. ISSN: 0006-3002., XP002075096 Netherlands ---	
P, X	DATABASE MEDLINE US NATIONAL LIBRARY OF MEDICINE (NLM), BETHESDA, MD, US PROBA K ET AL: "Cloning and sequencing of the cDNA encoding human neurotrypsin." XP002075103 see abstract & BIOCHIMICA ET BIOPHYSICA ACTA, (1998 MAR 9) 1396 (2) 143-7. JOURNAL CODE: AOW. ISSN: 0006-3002., Netherlands ---	1-4, 34-39, 42-44
P, X	GSCHWEND T P ET AL: "Neurotrypsin, a novel multidomain serine protease expressed in the nervous system." MOLECULAR AND CELLULAR NEUROSCIENCES, (1997) 9 (3) 207-19. JOURNAL CODE: B1D. ISSN: 1044-7431., XP002075097 United States see the whole document --- -/--	1-46

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	<p>YAMAMURA Y ET AL: "Molecular cloning of a novel brain-specific serine protease with a kringle-like structure and three scavenger receptor cysteine-rich motifs." BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, (1997 OCT 20) 239 (2) 386-92. JOURNAL CODE: 9Y8. ISSN: 0006-291X., XP002075098 United States see the whole document</p> <p>-----</p>	1-4, 34-39, 42-44

## PATENT COOPERATION TREATY

17  
REC'D 21 JUL 1999

## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference Sond.02, PCT	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/IB98/00625	International filing date (day/month/year) 24/04/1998	Priority date (day/month/year) 26/04/1997
International Patent Classification (IPC) or national classification and IPC C12N15/57		
Applicant SONDEREGGER, Peter		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 5 sheets, including this cover sheet.

- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  19/11/1998	Date of completion of this report  15.07.99
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. (+49-89) 2399-0 Tx: 523656 epmu d Fax: (+49-89) 2399-4465	Authorized officer  Grosskopf, R  Telephone No. (+49-89) 2399 8714 



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/IB98/00625

**I. Basis of the report**

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

**Description, pages:**

1-32 as originally filed

**Claims, No.:**

1-15 as received on 24/04/1999 with letter of 22/04/1999

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

**III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application.  
☒ claims Nos. 3-5,8-15.

because:

- ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/IB98/00625

- ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
- ☒ the claims, or said claims Nos. 3-5,8-15 are so inadequately supported by the description that no meaningful opinion could be formed.
- ☐ no international search report has been established for the said claims Nos. .

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes:	Claims 1,2,6,7
	No:	Claims
Inventive step (IS)	Yes:	Claims 1,2,6,7,
	No:	Claims
Industrial applicability (IA)	Yes:	Claims 1,2,6,7,
	No:	Claims

**2. Citations and explanations**

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

---

International application No. PCT/IB98/00625

**Ad item III and V:**

1. In the present application, the isolation of two genes is described which encode a so-called "neurotrypsin" from human and from mouse which allegedly acts as a serine protease.  
On the basis of the deduced amino acid sequence and on the basis of a comparison with similar proteins a hypothetical structure of the resulting protein has been created.
2. The present set of claims comprises three groups of claims, namely a product claims (Claim 1 and 2) and claims which are directed to the use of the product (Claims 3 to 15).
3. As far as product claims are concerned, they appeared to be acceptable since they relate to well-defined (complete) novel proteins or the corresponding nucleic acids which are not obviously derivable from the prior art.
4. However, **no** protein has been isolated, **no** functional tests have been carried and **no experimental data** have been submitted which support the suitability of the proteins (or nucleic acids) for any pharmaceutical purpose, let alone for a specific pharmaceutical application.  
Thus, most of the use claims i.e. Claims 3 to 15 are merely based on totally unsupported speculations.
5. Admittedly, some of said use claims relate to a use which can be carried out merely on the basis of the information which is made available by the amino acid sequence (see e.g. Claims 6 and 7). These uses might be possibly successfully applied with reasonable expectation of success and therefore required no further experimental data.
6. Most of the other use claims, however, cannot only be carried out on the basis of computer programs but require (confirmed) experiments in a biological system (development of drugs or pharmaceuticals etc. see Claims 4,5,8-15).  
In view of the fact, that not even the protein has been expressed, with regard to these claims the (scarce) experimental data submitted are not considered to be

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

---

International application No. PCT/IB98/00625

sufficient.

Therefore, these claims are not sufficiently supported by the description

Finally Claim 3 is a "border" case. The production of "any" recombinant protein (including aberrant forms with no function or no correct structure etc.) might be obtained by the use of the nucleotide sequences.

However in order to obtain a "functional" protein further experimental data appear to be requirable.

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>6</sup> : C12N 15/57, 9/64, A61K 31/70, 38/48, C12Q 1/37, A61K 48/00, C07K 16/40, C12N 15/00, A01K 67/027, C12Q 1/68		A1	(11) International Publication Number: <b>WO 98/49322</b> (43) International Publication Date: 5 November 1998 (05.11.98)
(21) International Application Number: PCT/IB98/00625 (22) International Filing Date: 24 April 1998 (24.04.98) (30) Priority Data: 966/97 26 April 1997 (26.04.97) CH (71)(72) Applicant and Inventor: SONDEREGGER, Peter [CH/CH]; Biochemisches Institut Universität Zürich, Winterthurerstrasse 190, CH-8057 Zürich (CH). (74) Agent: ZINK-WILD, Markus, Peter; Patentanwaltsbüro Zink, Birchlistrasse 11, CH-8173 Riedt-Neerach (CH).		(81) Designated States: AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GE, GW, HU, ID, IL, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, SL, TR, TT, UA, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>	
(54) Title: NEUROTRYPSIN			
(57) Abstract  There are described neurotrypsins of the formulas (I) or (II), including the separate coding and coded sequences of these compounds of the formulas (I) or (II). These compounds may be used as at least one active compound in a pharmaceutical component. The coded peptide sequences of these compounds may be used as targets for the development of pharmaceutical drugs.			